

Product Brief

Mobile Intel® 945GME Express Chipset

Embedded Computing



Mobile Intel® 945GME Express Chipset for Embedded Computing

Product Overview

The Mobile Intel® 945GME Express chipset provides excellent flexibility for developers of embedded applications by offering improved graphics and increased I/O bandwidth over previous Intel® chipsets, as well as remote asset management capabilities and improved storage speed and reliability.

Features include an integrated 32-bit 3D graphics engine based on Intel® Graphics Media Accelerator 950 (Intel® GMA 950) architecture, a 533/667 MHz front-side bus, 4 GB of 400/533/667 MHz DDR2 SODIMM system memory, Intel® Active Management Technology¹ (Intel® AMT), and Intel® Matrix Storage Technology.

The Mobile Intel 945GME Express chipset consists of the Intel® 82945GME Graphics Memory Controller Hub (GMCH) and Intel® I/O Controller Hub 7-M (ICH7-M), available in two SKUs. It delivers outstanding system performance through high-bandwidth interfaces such as PCI Express², Serial ATA, and Hi-Speed USB 2.0 connectivity.

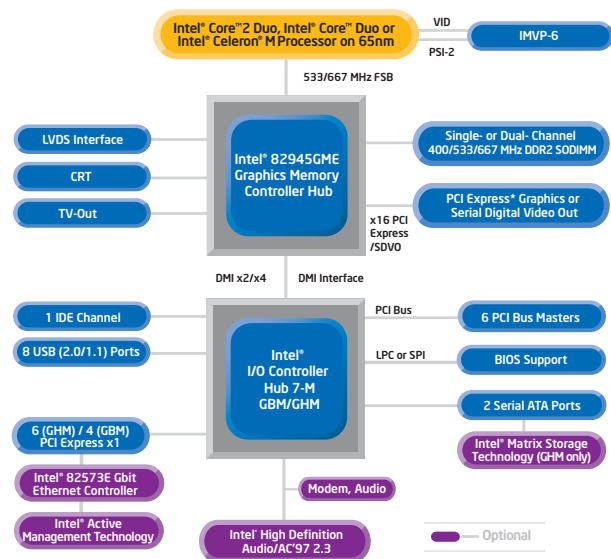
The chipset is designed for and validated with Intel® Core™2 Duo and Intel® Core™ Duo processors, and Intel® Celeron® M processors on 65nm. Mobile Intel 945GME Express chipset-based platforms are part of Intel's comprehensive validation process, enabling fast deployment of next-generation platforms to help developers maximize competitive advantage while minimizing development risks.

Product Highlights

- Optimized on a variety of Intel® processors to address the requirements of a range of embedded applications such as interactive clients, gaming platforms and industrial automation equipment:
 - Intel Core 2 Duo processors: T7400^A at 2.16 GHz with 34 watts thermal design power (TDP), L7400^A at 1.5 GHz (17 watts TDP), and U7500^A at 1.06 GHz (10 watts TDP)
 - Intel Core Duo processors: T2500^A at 2.0 GHz (31 watts TDP) and L2400^A at 1.66 GHz (15 watts TDP)
 - Intel Celeron M processor 440^A at 1.86 GHz (27 watts TDP)
 - Intel Celeron M processor 530^A at 1.73 GHz (31 watts TDP)
 - Intel Celeron M processor Ultra Low Voltage 423^A (5.5 watts TDP)
- 533/667 MHz front-side bus delivers a high-bandwidth connection between the processor and platform
- Dual-channel non-ECC 667 MHz DDR2 SODIMM support provides high-speed system memory for greater platform performance
- Improved graphics with faster performing integrated graphics engine
- Dual independent display support, at graphics core speeds up to 250 MHz, provides a wealth of options for using high-resolution displays
- x16 PCI Express and dual-channel SDVO graphics interfaces support high throughput for high-end graphics
- Advanced packaging technology and industry-leading electrical design innovations deliver long-term system reliability over a broad spectrum of operating conditions
- Direct Media Interface (DMI) chip interconnect can be implemented at x4 or x2 widths, and provides up to 1 GB/s in each direction in full duplex
- Four USB host controllers provide high-performance peripherals with 480 Mb/s of bandwidth, while enabling support for up to eight USB 2.0 ports
- Up to four PCI Express ports configurable as one single x4 or four single x1 ports on the ICH7-M (product code NH82801GBM)
- Up to six PCI Express ports configurable as one single x4 and two x1 ports, or six x1 ports on the ICH7-M DH (Digital Home) (product code NH82801GHM)
- Intel® High Definition Audio³ interface for full surround sound
- LAN Connect Interface (LCI) provides flexible network solutions such as 10/100 Mb/s Ethernet and 10/100 Mb/s Ethernet with LAN manageability
- Integrated Serial ATA host controller supports two ports and data transfers up to 150 MB/s
- Intel Matrix Storage Technology provides both AHCI and RAID functionality for improved storage speed and reliability, available with ICH7-M DH (product code NH82801GHM)

Product Highlights (continued)

- Intel AMT, when used with the Intel® 82573E Gigabit Ethernet Controller, supports high-quality asset management capabilities such as remote management of unmanned sites
- Supported by the Intel® Embedded Graphics Drivers and videos BIOS, developed specifically for embedded products and applications (developer.intel.com/design/intarch/SWsup/graphics_drivers.htm)
- Embedded lifecycle support enables extended product availability for embedded and communications customers, protecting system investment
- Along with a strong ecosystem of hardware and software vendors, including members of the Intel® Communications Alliance (intel.com/go/ica), Intel helps developers cost-effectively meet design challenges and speed time-to-market



Mobile Intel® 945GME Express Chipset for Embedded Computing

Product	Product Code	Package	Features
Intel® 82945GME Graphics Memory Controller Hub (GMCH)	QG82945GME	1466 µFC-BGA	533/667 MHz front-side bus; Up to 4 GB of 667 MHz DDR2 SODIMM system memory; Intel® GMA 950; PCI Express* external graphics support
Intel® I/O Controller Hub 7-M (ICH7-M)	NH82801GBM	652 µ-BGA	Direct connection to GMCH via Direct Media Interface; Four PCI Express root ports; Two-port Serial ATA controller; Up to eight USB 2.0 ports; Intel® High Definition Audio ³ interface
Intel® I/O Controller Hub 7-M (ICH7-M DH) [with support for RAID]	NH82801GHM	652 µ-BGA	Direct connection to GMCH via Direct Media Interface; Six PCI Express root ports; Two-port Serial ATA controller; Up to eight USB 2.0 ports; Intel® High Definition Audio interface; RAID 0/1

¹Intel® Active Management Technology requires the platform to have an Intel® AMT-enabled chipset, network hardware and software, as well as connection with a power source and a corporate network connection. With regard to notebooks, Intel AMT may not be available or certain capabilities may be limited over a host OS-based VPN or when connecting wirelessly, on battery power, sleeping, hibernating or powered off. For more information, see <http://www.intel.com/technology/iamt>.

²PCI Express reduced-power state LOs not supported.

³Intel® High Definition Audio requires a system with an appropriate Intel chipset and a motherboard with an appropriate codec and the necessary drivers installed. System sound quality will vary depending on actual implementation, controller, codec, drivers and speakers. For more information about Intel® HD audio, refer to <http://www.intel.com/>.

⁴Intel processor numbers are not a measure of performance. Processor numbers differentiate features within each processor family, not across different processor families. See http://www.intel.com/products/processor_number for details.

Intel Access

Embedded Intel® Architecture Home Page:	intel.com/design/intarch
Developer's Site:	intel.com/design
Intel in Embedded and Communications:	intel.com/go/embedded
General Information Hotline:	(800) 628-8686 or (916) 356-3104 5 a.m. to 5 p.m. PST
Intel® Literature Center:	(800) 548-4725 7 a.m. to 7 p.m. CST (U.S. and Canada) International locations please contact your local sales office.

INFORMATION IN THIS DOCUMENT IS PROVIDED IN CONNECTION WITH INTEL® PRODUCTS. NO LICENSE, EXPRESS OR IMPLIED, BY ESTOPPEL OR OTHERWISE, TO ANY INTELLECTUAL PROPERTY RIGHTS IS GRANTED BY THIS DOCUMENT. EXCEPT AS PROVIDED IN INTEL'S TERMS AND CONDITIONS OF SALE FOR SUCH PRODUCTS, INTEL ASSUMES NO LIABILITY WHATSOEVER, AND INTEL DISCLAIMS ANY EXPRESS OR IMPLIED WARRANTY, RELATING TO SALE AND/OR USE OF INTEL PRODUCTS INCLUDING LIABILITY OR WARRANTIES RELATING TO FITNESS FOR A PARTICULAR PURPOSE, MERCHANTABILITY, OR INFRINGEMENT OF ANY PATENT, COPYRIGHT OR OTHER INTELLECTUAL PROPERTY RIGHT. UNLESS OTHERWISE AGREED IN WRITING BY INTEL, THE INTEL PRODUCTS ARE NOT DESIGNED NOR INTENDED FOR ANY APPLICATION IN WHICH THE FAILURE OF THE INTEL PRODUCT COULD CREATE A SITUATION WHERE PERSONAL INJURY OR DEATH MAY OCCUR.

Intel may make changes to specifications and product descriptions at any time, without notice. Designers must not rely on the absence or characteristics of any features or instructions marked "reserved" or "undefined." Intel reserves these for future definition and shall have no responsibility whatsoever for conflicts or incompatibilities arising from future changes to them. The information here is subject to change without notice. Do not finalize a design with this information. The products described in this document may contain design defects or errors known as errata which may cause the product to deviate from published specifications. Current characterized errata are available on request. Contact your local Intel sales office or your distributor to obtain the latest specifications and before placing your product order. Copies of documents which have an order number and are referenced in this document, or other Intel literature, may be obtained by calling 1-800-548-4725, or by visiting www.intel.com.

Intel, the Intel logo, Intel. Leap ahead., Intel. Leap ahead. logo, Intel Core, and Celeron are trademarks of Intel Corporation in the U.S. and other countries.

*Other names and brands may be claimed as the property of others.

Copyright © 2007 Intel Corporation. All rights reserved.

Printed in USA

0607/KSC/OCG/XX/PDF

♻ Please Recycle

310936-007US

